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UNIFORM GUAGE.

1846.

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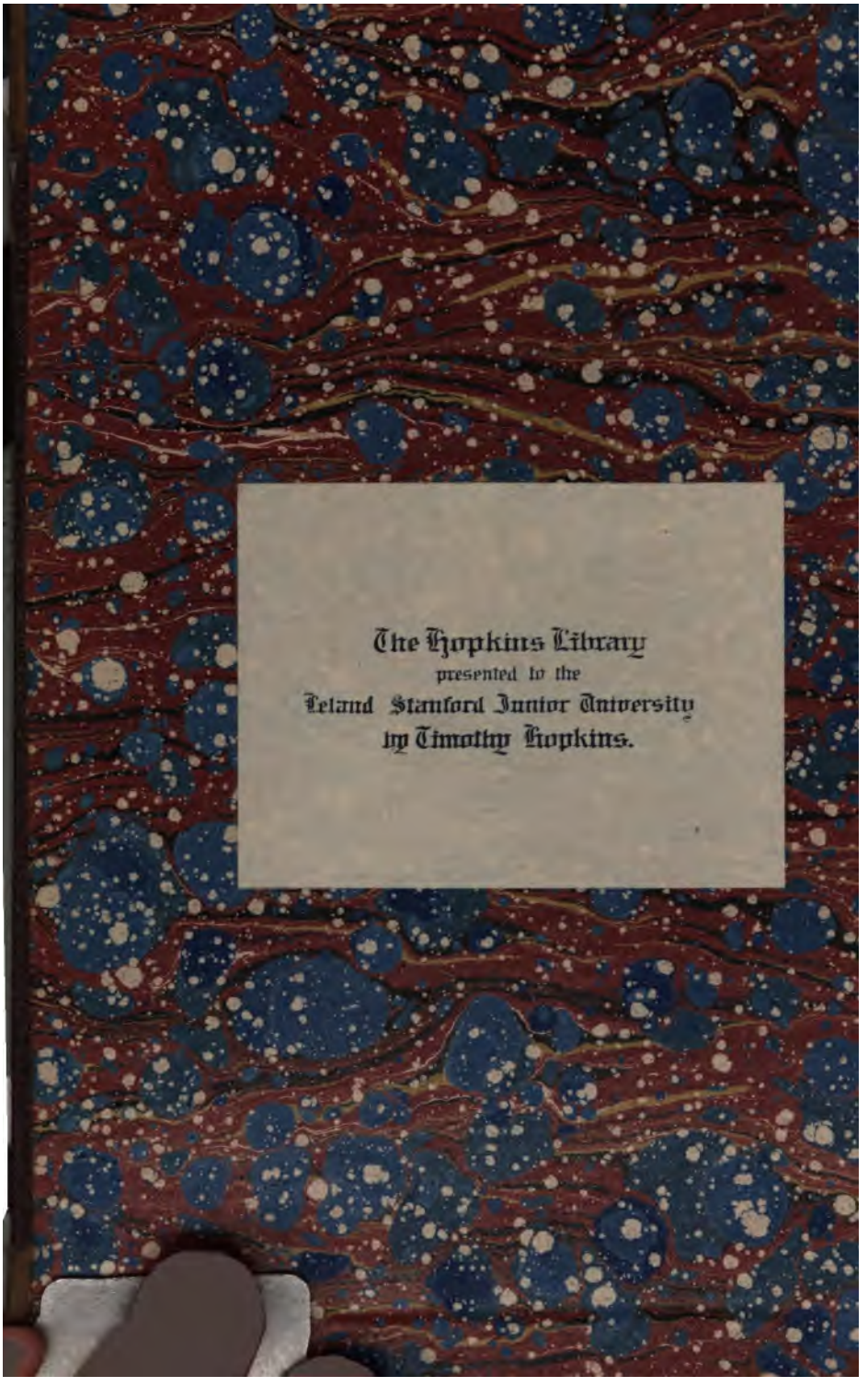
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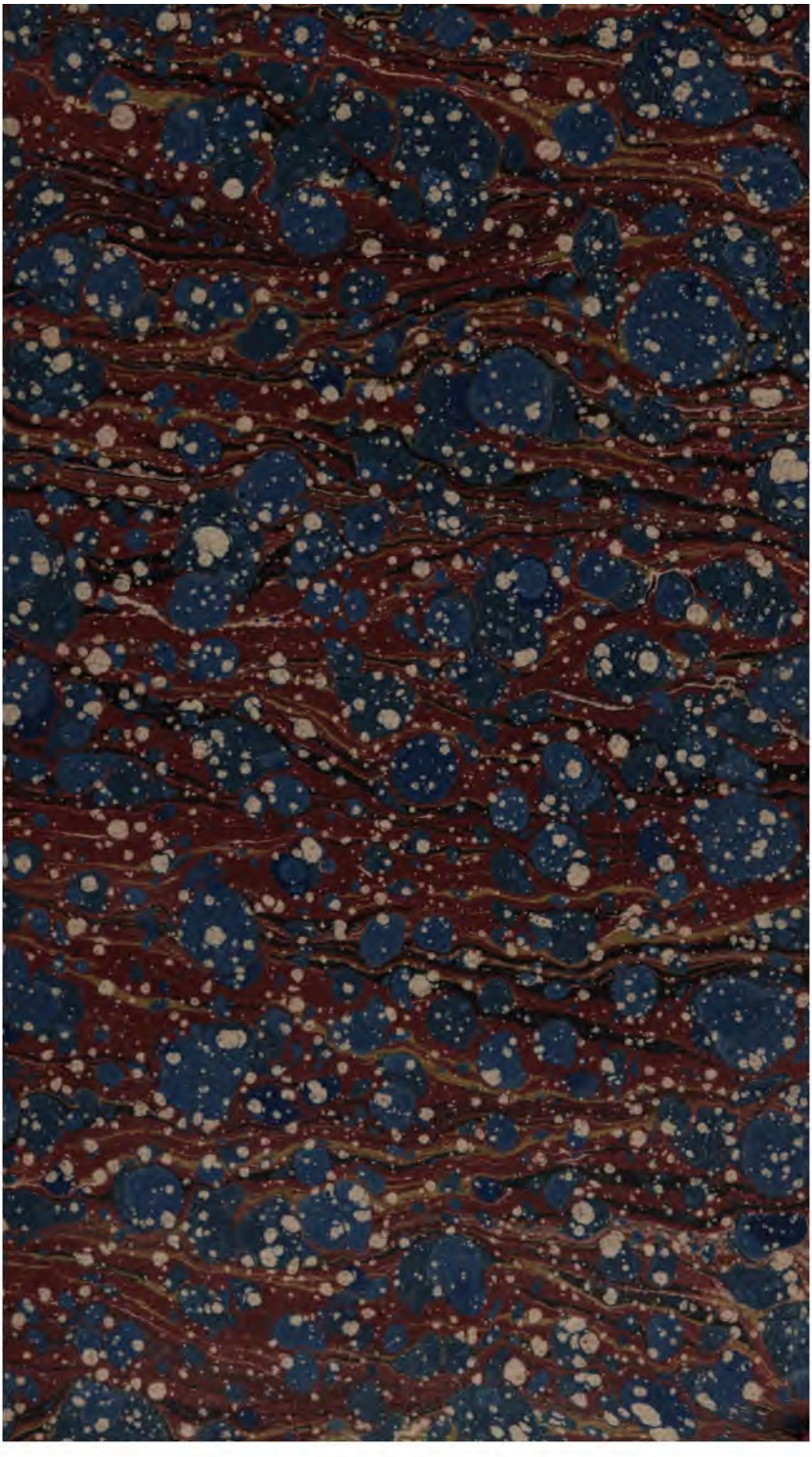

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NATIONAL UNIFORMITY OF GAUGE:

A

LETTER TO LORD DALHOUSIE,

SUBMITTING

REASONS FOR PREFERRING

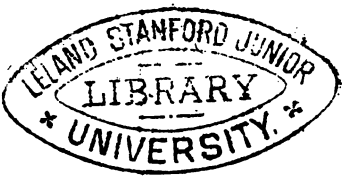
THE

Original Recommendations of the Gauge Commissioners,

TO THE

RECENT PROPOSALS OF THE BOARD OF TRADE.

LONDON:
W. STEPHENSON, 12 & 13, PARLIAMENT STREET,
1846.



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LONDON:
Printed by STEWART & MURRAY,
Old Bailey.

TO THE

RIGHT HONOURABLE EARL DALHOUSIE,

PRESIDENT OF THE BOARD OF TRADE,

&c. &c. &c.

My Lord,

That the railways of this country must be regarded as parts of one united system, through every vein and artery of which traffic should flow without interruption, is an opinion which will not now, I think, be disputed. If it is to such a state of things that the railway system is tending, it is clear that we must have no obstructions tending either to divert the trade of the country into any but the shortest and cheapest routes, or to diminish the flow of that trade; above all, we must have no physical obstructions. Clashing interests will in time be reconciled, but nothing will harmonize railways of two different widths but pickaxes and shovels.

To uniformity of Gauge then we must come, and this is the conclusion to which the Gauge

Commissioners have deliberately arrived, after examining and listening to, for six weary months, every objection which ingenuity could devise in favour of the converse of this proposition.

These able and competent judges express themselves on the subject of diversity of Gauge, as follows :—

1st. Fast or Express Trains.

We believe that the inconvenience produced by a Break of Gauge will, in some respects, be less felt in these than in other trains; and although such removal must create delay and some confusion, as well as personal discomfort, especially at night and in the winter season, besides the risk of a loss of luggage, yet we do not consider the Break of Gauge, in this instance, as being an inconvenience of so grave a nature as to call for any legislative measures, either for its removal or for its mitigation.

2ndly. Ordinary or Mixed Trains.

In these trains the passengers considerably exceed in number those who travel by the fast trains, and they have generally a much greater quantity of luggage. To such travellers a change of carriage is really a serious inconvenience.

We arrive, therefore, at the conclusion, that the Break of Gauge would inflict considerable inconvenience on travellers by the trains now under consideration, and that this inconvenience would be much increased at points of convergence of more than two lines.

The change of carriages, horse-boxes, and trucks, and the transference of luggage of an entire train of much extent, must, even in the day time, be an inconvenience of a very serious nature; but at night, it would be an intolerable evil; and we think legislative interference is called for to remove or mitigate such an evil.

In the conveyance of machinery and articles of a similar class, which are both heavy and delicate, it is of the utmost conse-

quence that the load should not be disturbed between the beginning and the end of the journey: a change of carriage, such as would result in all probability from a Break of the Gauge, would altogether prevent the transport of such articles by this mode of conveyance.

We believe that the traffic upon the line of railway between Birmingham and Bristol has been greatly restricted by the interruption of Gauge at Gloucester.

In respect to the conveyance of minerals, the inconvenience of a Break of Gauge would be very serious; the transfer being attended with an expense, which would be sensibly felt in consequence of the low rate of tolls charged on such articles; moreover, many descriptions of coal, such as a considerable proportion of that of the Midland Counties, are subject to great deterioration by breakage.

In regard to various articles of agricultural produce, the loss by removal would be less than on other classes of goods; much inconvenience, however, would be found in the transfer of timber; and the difficulty of shifting cattle would be so great as to present an insurmountable obstacle to such an arrangement, from the excited state of the animals after travelling by railway and the resistance they in consequence offer when it is attempted to force them a second time into a railway waggon.

4thly. Conveyance of Troops.

There is another use of railways which we have deemed it necessary to consider; we allude to the transport of Your Majesty's troops, with their military stores, &c., either in the ordinary movements of corps through the country, in the time of peace; or in the more pressing and urgent case of their movements for the defence of the coast, or of the interior of the country.

We have carefully weighed the important information given to us by the Quarter-Master-General of Your Majesty's Forces, as well as by the Inspector-General of Fortifications, both officers of great experience; and we deduce from their opinions, that although a Break of Gauge, on the line of route, would produce

both delay and confusion, yet, that as in time of peace it is usually practicable to give notice of the intended movements of a body of troops, the inconvenience of the Break of Gauge might be so reduced as not to be an evil of great importance; but, in the event of operations for defensive objects against an enemy, the inconvenience would assume a serious character.

It would appear, that for the defence of the coast, the proper course would be to retain the great mass of troops in the interior of the country to wait until the point selected by the enemy for his attack should be ascertained for certainty, and then to move upon that point such an overwhelming force as should be adequate to the emergency.

It is obvious, that the success of such a system of defence must depend upon the means of conveying the troops with great despatch, and without interruption on the journey.

The troops should be carried with their equipments complete in all their details, and with their artillery and ammunition; and it therefore appears indispensably necessary, in order to secure the requisite supply of carriages, where perhaps little or no notice can be previously given, that the whole should be conveyed in the same vehicles from the beginning to the end of the journey.

The effect of a Break of Gauge might in this view of the case expose the country to serious danger.

To all classes of merchandise, as well as to all military operations connected with Railways, one general remark will apply, that in starting from any one point, it is usually practicable to obtain a sufficient number of waggons for whatever may be required to leave that point, however irregular the traffic may be; but, at the convergence of several lines, where the greater number might be of a Gauge not corresponding to the Gauge of the other lines, if it happened that all were unusually loaded at the same time, it would probably be impossible to provide on the latter, an adequate number of waggons to carry off all the loads thus brought; the alternative would be, on the one hand, to submit to great confusion, delay, and inconvenience, on all the converging lines having the majority on the same Gauge; or, on the other

hand, to maintain on the lines being in the minority, a very extensive stock of carriages, which in general would be totally useless.

There is one point which forcibly presses on our attention, and the truth of which must be readily acknowledged, but of which the importance is not at first equally obvious; it is, that the greater part of the inconveniences to which we have alluded, are not inconveniences of rare occurrence, and which would affect only a small number of persons, but, on the contrary, that many of them would occur several times in the course of every day, to a great many persons, at each point at which a Break of Gauge might exist. The cumulative amount of such inconvenience would of necessity be very considerable, and we feel bound to sum up our conclusions, by stating that we consider a Break of Gauge to be a very serious evil.

I perceive that the concurrence of the department of Government, over which your Lordship so ably presides, is thus emphatically expressed in the Minute of June 6th :—

My Lords fully and entirely concur in the general conclusions at which the Commissioners have arrived with respect to the advantages of uniformity of Gauge for the conveyance of the internal traffic of the country. They are of opinion that the facts set forth in the Report, and the evidence by which they are supported, incontestably establish the conclusion, that a "Break of Gauge is a very serious evil," and they see no reason to doubt the soundness of the opinion the Commissioners have expressed, that none of the mechanical contrivances, or other methods proposed for mitigating the evil, "are calculated to remedy, in any important degree, the inconveniences attending a Break of Gauge."

If ever a decision, then, was carefully considered, reconsidered, and finally, after the most mature

deliberation, confirmed, it is this decision ON THE NECESSITY OF UNIFORMITY OF GAUGE.

The only feasible mode also of attaining uniformity of Gauge, is equally clearly set forth by the Commissioners, who, after going minutely, and at great length into the examination of the respective merits of the two different Gauges, came to the conclusion—

"*That the Narrow Gauge is that which should be preferred for general convenience,* and, therefore, if it is imperative to produce uniformity, we should recommend that uniformity to be produced by an alteration of the Broad to the Narrow Gauge, more especially when we take into consideration that the extent of the former at present in work is only 274 miles, while that of the latter is not less than 1901 miles, and that the alteration of the former to the latter, even if of equal length, would be the less costly as well as the less difficult operation."

The paragraphs I have just quoted establish, in the most distinct terms which can be made use of, that uniformity of Gauge should be brought about without delay, and that the mode of doing this must be by altering the 274 miles already laid of 7 feet Gauge lines, to the Gauge of the 1901 miles of the 4 feet 8½ inch Gauge.

Why, then, is this not to be done at once? "Because," says the Minute of the Lords of the Committee of Privy Council for Trade, "it is a great operation, so costly and difficult, as in truth to be impracticable."

Now, if this is so, what, in the first place, would

be the cost of altering the 274 miles of Broad Gauge completed? One of the witnesses (Mr. Harding) handed in to the Commissioners a detailed account of the cost which has been disputed by no one. The Commissioners indeed say, with regard to this estimate, that they see no grounds to dispute the general grounds of it. IT AMOUNTS TO A MILLION ONLY.

Do the Lords of the Committee of Privy Council for Trade then mean to say that no means can be devised of raising *one* million to remove an obstruction which, in the words of the Commissioners, "may expose the country to serious danger," which "presents an insurmountable obstacle to the conveyance of cattle by railway"—an object so important to agriculturists—which "would inflict a serious inconvenience on travellers in ordinary or mixed trains"—which "would altogether prevent the transport of machinery and articles of a similar class"—which, "as regard the change of carriages, horse-boxes, and trucks, and the transference of luggage, must, even in the day time, be an inconvenience of a very serious nature, but at night would be an intolerable evil"—which, "with regard to the conveyance of minerals, would also be very serious?"

Are we to be told that this intolerable nuisance is to be perpetuated because the public and the Railway Companies between them cannot raise one million? Why, Mr. Hudson would raise as much

any morning to make a railway to Stokepogis, or any other point which can be named.

And is it to be believed that the public at large and the great railway interests (scrambling for leave at this moment to spend some *two hundred* millions this year), who are both most deeply interested in the question, cannot be made to subscribe *one single million* to remove an obstruction to the home trade, which will diminish the traffic by railways, and so diminish even the revenue of Government, now derived by direct taxation of railways, to a far greater amount than this solitary million?

It is clear that such a plea as *the cost* of the alteration of Gauge cannot be gravely entertained.

Next as to the difficulty: Mr. Harding, I perceive, accompanied his estimate of the cost of altering the Broad Gauge by an explanation to the Commissioners of the mode by which it could be effected without stopping a single train. So that the public who travelled on the Broad Gauge would know nothing of what was going on until they found themselves shown into a Narrow Gauge carriage some fine morning, *as was actually done on the Eastern Counties, and Northern and Eastern Lines.* For this is what Mr. Braithwaite the Engineer says, with regard to the alteration of the Gauge on the Eastern Counties, and Northern and Eastern Railways:

1836. Was the change of Gauge effected without any great inconvenience?

Yes; one would scarcely have known any change was taking place; it was done remarkable well under the management of Mr. Berkley. It surprised all parties that it was done as well as it was, considering that it never interfered with the running of the trains.

1837. Could you change back again to that same Gauge, or to a broader Gauge without more inconvenience?

Perfectly so. I should say there would be about the same expense in the one instance as in the other; it might be done with very great facility.

1838. Did it cost 1000*l.* per mile altogether, or more than that?

I think that was as near the amount as possible.

This is confirmed by Mr. Stephenson, by Mr. Bidder, and by all who witnessed the operation.

The alteration of the Gauge of a line 88 miles long then, was thus done without any inconvenience, without stopping a single passenger train, and at a cost of 600*l.* per mile, including the alteration of engines and carriages, and it took about six weeks to do. This is an operation precisely similar, or rather, I should say, somewhat more difficult than *altering the Broad Gauge* to the Narrow Gauge. Why then is such an operation termed difficult, or nearly impracticable? *there is not a tittle of evidence to show it is anything else than a remarkably easy operation.*

The admitted necessity of uniformity in the case, and the admittedly small expense at which it can *now* be attained, being thus, I think, manifest from

the Report of the Commissioners, and the evidence taken by them, I now come to the consideration of the two modes of treating the question of the Gauge of existing and future railways, as respectively suggested by the Gauge Commissioners, and by the Lords of the Committee of the Board of Trade.

The main recommendation of the Gauge Commissioners was simply—

"That all lines now in course of construction, or hereafter to be constructed, shall be on the 4 feet 8½ inch Gauge."

"And that some equitable means should if possible be found producing entire uniformity of Gauge."

The advantage of this plan is its obvious simplicity; it involves no expense; it merely stops the evil of diversity of Gauge from spreading, and the difficulty of altering the Gauge hereafter from increasing; it keeps the points of Break of Gauge to the fewest possible number, and puts four out of six of the whole number into the hands of the Broad Gauge Company, who are best able to deal with the difficulty of a break of Gauge, and who treat it most lightly.

THE RECOMMENDATION OF THE BOARD OF TRADE IS, THAT 581 MILES MORE OF RAILWAY AT LEAST, BESIDES FUTURE BRANCHES OR LINES SOUTH OF BRISTOL (IF PERMITTED BY THE COMMITTEES ON THE BILLS) SHALL BE MADE ON THE BROAD GAUGE,

and that a duplicate Gauge be adopted over 30 miles of Railway, namely, from Rugby to Oxford, from Worcester to Wolverhampton, and, (if it should appear necessary,) from near Worcester to Oxford.

Now, what is the effect of this? It is, in the first place, TO INCREASE THE NUMBER OF MILES OF BROAD GAUGE RAILWAY FROM 274 TO 855, besides future branches or lines south of Bristol; making uniformity of Gauge thus *more than three times* as difficult and expensive to attain as it is now,—the alteration of the Gauge of 855 miles being *more than three times* as objectionable as the alteration of the Gauge on 274 miles.

At the same time it *multiplies indefinitely* the number of points of Break of Gauge,* or the intersection of lines of different Gauge.

* The Lords of the Committee of Privy Council for Trade do not, I think, see the effect of what they state, when they give their reasons for setting aside the recommendation of the Gauge Commissioners that the Break of Gauge should be at Oxford. "Since they (the Board of Trade) regard the Break of Gauge as a most serious evil, more especially in the conveyance of goods, they conceive that a continuous and a second line of communication between London and the district of Staffordshire, &c., must be regarded as of great value and importance."

The answer to this is, I think, very plain.

1st. By continuing the Broad Gauge from Oxford into Staffordshire, it is true that you do stave off the Break of Gauge from Oxford, but in so doing you cause no less than five intersections of Broad Gauge with Narrow Gauge lines, either con-

And although the proposed arrangement professes to be based on the principle of *saving the cost* of altering the Broad Gauge to the Narrow,

structed or now before the House, and which are schemes of such a character, promoted as branches of existing railways, as will certainly be made within the next five years.

So far from preventing the serious evil of a Break of Gauge then, you would thus multiply it five-fold.

2ndly. You extend the Broad Gauge by miles one-third, and put off and obstruct the consummation devoutly to be wished, of entire uniformity, at least in that proportion.

3rdly. You introduce Broad Gauge lines side by side with Narrow (so that they cannot assist each other or reciprocate traffic) into a mineral district to which it is quite unsuited, and all the branches of which it has accordingly been decided by the Committee on the Oxford, Worcester, and Wolverhampton Bill of this session shall be on the Narrow Gauge.

4thly. The minute of the Board of Trade itself, says that the effect of the extension of the Broad Gauge beyond Oxford will most probably lead to the formation of a Narrow Gauge line as well as a Broad Gauge line from near Worcester and Wolverhampton to Oxford: that is to say, of a *duplicate line*, involving a great outlay, which would be quite unnecessary if the Oxford and Worcester were made as the Commissioners recommended it to be, on the Narrow Gauge, instead of as the Board of Trade recommend, on the Broad.

5thly. A second and continuous line of communication on the Narrow Gauge between London and South Staffordshire is before Parliament, and this argument therefore falls to the ground.

And last, not least, by pushing forward the Broad Gauge, and by incurring, in order to avoid one Break of Gauge, intersections with Narrow Gauge lines, at each of which there is a Break of

it actually involves as much expenditure by the double Gauge arrangement as would serve to alter the whole of the existing Broad Gauge lines, and to establish at once ENTIRE UNIFORMITY OF GAUGE.

For these reasons, then, my Lord, I submit with the greatest respect,

THAT THE RECOMMENDATIONS ORIGINALLY PROPOUNDED BY THE GAUGE COMMISSIONERS TO MEET THE CASE OF THE GAUGE, CONSTITUTE VERY MUCH THE MOST JUDICIOUS AND FAIR PROPOSAL; AND THEREFORE, THAT THE RECOMMENDATION OF THE GAUGE COMMISSIONERS SHOULD BE CARRIED INTO EFFECT IN PREFERENCE TO THE VERY EXPENSIVE AND OBJECTIONABLE MODE OF DEALING WITH THE QUESTION PROPOSED IN THE MINUTE OF THE BOARD OF TRADE, WHICH, WHILE IT PURPOSES TO BE CONCEIVED WITH A FULL RECOGNITION OF THE IMPORTANCE OF UNIFORMITY OF GAUGE, IS SO FRAMED AS, IT IS FEARED, TO LEAD TO THE PERMANENT ESTABLISHMENT AND EXTENSION OF DIVERSITY OF GAUGE, TOGETHER WITH THE INTRODUCTION OF THE DANGEROUS, EXPENSIVE, AND INEFFECTIVE ARRANGEMENT, TERMED THE DOUBLE GAUGE

Gauge, you put forward an argument which might with equal force apply to a line between South Staffordshire and Liverpool, as to a line between London and South Staffordshire, and which may therefore, it is very probable, neutralise in practice the whole effect of the recommendation of the Board of Trade as to restricting the Broad Gauge in order to limit the evils of diversity of Gauge.

SYSTEM, CONDEMNED AS UNSAFE BY THE GREAT MAJORITY OF PRACTICAL ENGINEERS, AND OF WHICH THE COMMISSIONERS SAY, "THAT THE GENERAL ADOPTION OF SUCH A SYSTEM SHOULD NOT BE PERMITTED."

Printed by STEWART and MURRAY, Old Bailey.

MAP OF THE DISTRICTS

BROAD AND NARROW GAUGE RAILWAYS RESPECTIVELY,

SHOWING ALSO THE BREAKS OF GAUGE,

Where Passengers and Goods must be shifted from one Carriage to another.

[Reprinted, by permission, from the *Railway Chronicle.*]

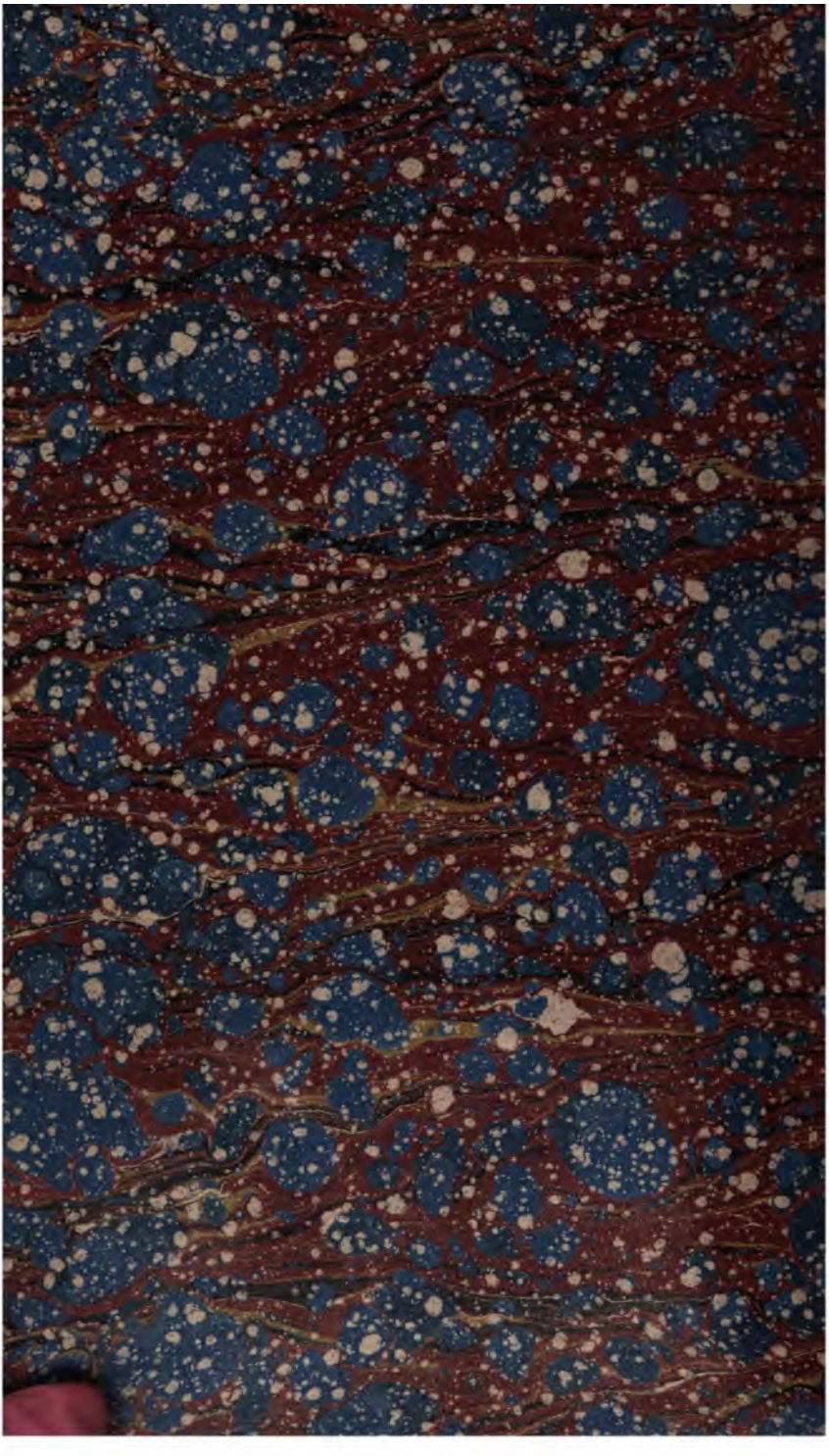
The district in which the gauge of the Railways is not yet determined is left white. The green lines in this district are those on which the BROAD OR EXCEPTIONAL GAUGE

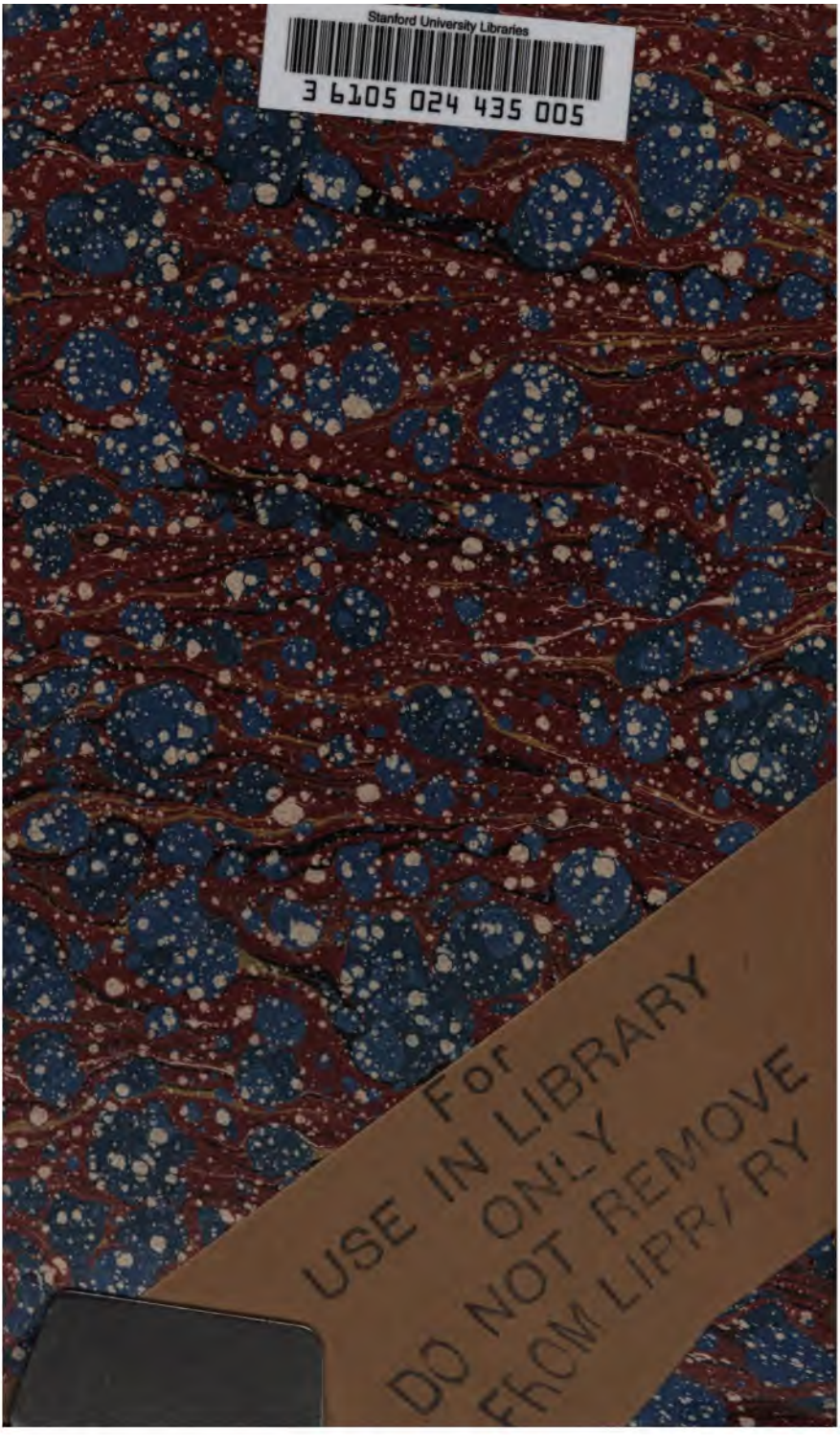
The proportions of the Broad to Narrow Gauge are as follows:—

		Value.		Length.
ways	Broad.....	£9,704,368	..	240
	Narrow....	57,186,137	..	1593

		Value.		Length.
Railways authorized but not opened	Broad.....	£7,432,600	..	577
	Narrow....	21,736,640	..	1216

auge—are not included in this total; reckoning them at about 300 miles, they make the total of existing Narrow Gauge Lines above 1,900 miles.

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